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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,463

04/05/2005

Geoffrey D Brown

62609B

4879

109

7590

07/26/2006

THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION,
P. O. BOX 1967
MIDLAND, MI 48641-1967

EXAMINER

ROJAS, OMAR R

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/530,463

Applicant(s)

BROWN ET AL.

Examiner

Omar Rojas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on April 5, 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Detailed Action.

DETAILED ACTION***Drawings***

1. Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.

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(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. The disclosure is objected to because of the following informalities: The specification lacks section headings.

Appropriate correction is required.

3. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 3, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.**

Patent No. 5,723,545 to Harrington et al. ("Harrington").

In re claims 1 and 6, Harrington discloses an optical component and method of making said component comprising:

an extruded blend "M" and/or "N" (see Table 2, reproduced below) of

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(a) a crystalline polypropylene ("PP1"), inherently having a crystallinity of greater than about 65 weigh percent because it has high crystallinity and is isotactic (col. 9, lines 25-31), and

(b) an impact modifying polymer ("rubber"), wherein the crystalline polypropylene and impact modifying polymer being present in amounts effective for providing a test specimen prepared from the extruded blend with a 1-percent secant modulus (ASTM D-790) at 23 degrees C. of at least about 1,600 MPa and a Notched Izod (ASTM D-256) at 23 degrees C. of at least about 35 J/m, as seen in Table 3b and Table 4. Table 2, Table 3b, and Table 4 of Harrington are reproduced below.

TABLE 2

Blend	PP (g)	ENB (g)	wt. % rubber
A	PP5 (0.032)	ENB1 (0.6)	95%
B	PP5 (0.07)	ENB1 (0.6)	90%
C	PP5 (0.106)	ENB1 (0.6)	85%
D	PP5 (0.4)	ENB1 (0.6)	60%
E	PP5 (0.6)	ENB1 (0.6)	50%
F	PP3 (36.31)	ENB2 (90.4)	20%
G	PP3 (27.15)	ENB2 (18.14)	40%
H	PP4 (34.92)	ENB3 (11.64)	25%
M*	PP1 (10 lbs)	none	4%
N*	PP1 (9.6 lbs)	ENB5 (181.6 g)	4%
O*	PP1 (9.6 lbs)	VISTALON 457™ (181.6 g)	4%
P	PP2 (9.6 lbs)	ENB5 (181.6 g)	4%
Q	PP2 (9.6 lbs)	Vistalon 719™ (181.6 g)	4%
R	PP2 (9.6 lbs)	Vistalon 404 Ⓢ (181.6 g)	4%
S	PP2 (9.6 lbs)	Vistalon 457™ (181.6 g)	4%
T	PP2 (10 lbs)	none	4%

* = 550 ppm of BHT and 800 ppm of calcium stearate were added as a stabilizing package.

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TABLE 3b

Blend	Secant 1 mod. (psi/MPa)	Gardner impact (in/lbs)	Tm (°C.)	Tc (°C.)	Mold shrinkage (%)	60° gloss (%)
M	252727/1743	8.2 Br	168/160	114	1.35	87.6
N	247397/1706	61 BrSh	168/160	115	1.36	87.1
O	230029/1586	197 DuSh	168/160	116	1.29	87.0
P	200500/1382	167 DuSh	160	115	1.3	87.4
Q	193079/1331	163 DuSh	161/144	113	1.3	86.9
R	183279/1264	167 Du	166/155	112	1.25	86.7
S	192026/1324	177 Du	166/155	113	1.22	86.8
T	201100/1387	118 DuSh	161.4	120.2	1.21	87.4

Du = ductile, Sh = shatter, Br = brittle.

TABLE 4

(Izod impact results in ft-lbs/in (J/cm))

Blend	Notched 23° C.	Unnotched 23° C.	Unnotched -18° C.	Unnotched -23° C.	Unnotched -40° C.
M	0.65/4.4	32.7/225.4	4.0/27.5	3.3/22.7	3.8/26.2
N	0.68/4.6	30.4/209.6	4.5/31.0	3.6/24.8	2.8/19.3
O	0.88/6.0	30.0/206.8	5.7/39.3	4.4/30.3	4.5/31.0
P	0.47/3.2	22.5/155.1	3.1/21.3	2.8/19.3	2.8/19.3
Q	0.60/4.1	30.3/208.9	3.2/22.0	2.7/18.6	3.1/21.3
R	0.70/4.8	30.1/207.5	4.0/27.5	4.4/30.3	3.4/23.4
S	0.74/5.1	30.2/208.2	3.8/26.2	4.2/28.9	3.9/26.8
T	0.66/4.5	27.4/188.9	4.1/28.2	4.0/27.5	3.8/26.2

The crystalline polypropylene PP1 of Harrington inherently has a melt flow rate of from about 1 to about 20 grams per 10 minutes at 230 degrees C. because it is isotactic, highly crystalline and also because such a melt flow rate appears to be conventional in view of the melt flow rates disclosed by Harrington for similar crystalline polypropylenes at column 9, lines 32-45. Thus,

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each and every limitation of claims 1 and 6 is either explicitly or implicitly disclosed by Harrington.

In re claim 3, because the impact modifying polymer used by Harrington is the same as that used by Applicant(s) (i.e., rubber), it inherently has a polar functionality, thereby reducing hydrocarbon oil absorption to provide improved gel compatibility performance.

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6. Claims 1, 3, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,916,953 to Jacoby et al. ("Jacoby").

In re claims 1 and 6, the claimed invention is clearly disclosed by Jacoby in column 7, line 25 to column 8, line 42 and in Tables I-IV.

Table II and Table IV of Jacoby are reproduced below.

TABLE II							
	Examples (Runs)						
	III	IV	V	VI	VII	VIII	IX
PP ¹ wt. %	51 ⁷	61 ⁷	51 ⁸	61 ⁸	51 ⁹	61 ¹⁰	51.5
Glass Fiber wt. %	40	30	40	30	40	30	40
Func. PP wt. %	4.0 ¹¹	4.0 ¹¹	4.0 ¹¹	4.0 ¹¹	4.0 ¹¹	4.0 ¹¹	2.5 ¹¹
Impact Modifier (wt. %)	Exact ¹² (5)	Exact ¹² (5)	Exact ¹² (5)	Exact ¹² (5)	Exact ¹² (5)	Exact ¹² (5)	Exact ¹² (5)
MFR g/min.	2.7	2.7	3.3	3.9	5.3	8.0	5.5
Tensile Strength ² kpsi(MPa)	14.1 (97)	13.2 (91)	14.9 (103)	13.9 (96)	15.8 (109)	13.9 (96)	15.2 (112)
Tensile Modulus ³ kpsi(MPa)	1380 (9520)	985 (6790)	1330 (9520)	1030 (7100)	1420 (9790)	1040 (7170)	1380 (9520)
Flexural Modulus ⁴ kpsi(MPa)	1080 (7450)	750 (5170)	1130 (7790)	820 (5650)	1160 (8000)	810 (5580)	1200 (8270)
Elongation ⁵	2.70	3.00	2.40	2.50	2.70	3.00	2.80
Izod ⁶ ft-lb/in. (J/m)	2.60 (139)	2.85 (152)	2.23 (119)	2.47 (132)	2.58 (138)	2.69 (144)	2.58 (138)
	Examples (Runs)						
	(14)	(15)	(16)	(17)			
PP ¹ wt. %	56 ¹⁰	51	51	56			
Glass Fiber wt. %	30	40	40	40			
Func. PP wt. %	4.0 ⁷	4.0 ⁷	—	4.0 ⁷			
Impact	Engage ¹⁴ Nylon 6,6 ¹⁵						

TABLE IV

	Examples (Runs)						
	XXIX	XXX	XXXI	XXXII	(24)	(25)	(26)
PP ¹ wt. %	84.1	85.8	86.0	87.4	92.4	92.4 ⁹	93.1
Glass Fiber wt. %	40	40	30	30	40	40	30
Func. PP wt. %	4.6 ⁷	2.9 ⁸	3.9 ⁷	2.5 ⁸	4.6 ⁷	4.6 ⁷	3.9 ⁷
Impact Modifier (wt. %)	Exact ¹⁰ (8.3)	Exact ¹⁰ (8.3)	Exact ¹⁰ (8.3)	Exact ¹⁰ (8.3)	—	—	—
MFR g/min.	5.0	4.8	5.0	6.4	4.6	4.8	5.6
Tensile Strength ² kpsi(MPa)	16.4 (113)	16.4 (113)	14.3 (99)	14.7 (101)	17.9 (123)	16.1 (111)	15.5 (107)
Tensile Modulus ³ kpsi(MPa)	1478 (10190)	1413 (9740)	1064 (7340)	1075 (7410)	1519 (10470)	1423 (9810)	1111 (7660)
Flexural Modulus ⁴ kpsi(MPa)	1178 (8122)	1149 (7922)	812 (5598)	832 (5737)	1243 (8570)	1117 (7702)	885 (6102)
Elongation ⁵	3.2	3.1	3.3	3.1	2.7	3.2	3.1
Izod ⁶ ft-lb/in.(J/m)	2.91 (155)	2.94 (157)	2.70 (144)	2.75 (148)	2.56 (137)	2.70 (144)	2.48 (132)

¹ ACCPRO ® 9934 (unless otherwise noted)² Tensile Strength ASTM D638 at 23° C.³ Tensile Modulus ASTM D638 at 23° C.⁴ Elongation at break ASTM D638 at 23° C.⁵ Notched (1/8 in.) Izod (23° C.) ASTM D256⁶ Flexural Modulus ASTM D790A at 23° C.⁷ Functionalized PP = DuPont Fusabond™ 109D⁸ Functionalized PP = Uniroyal Polybond™ 3200⁹ Amoco 7634 homopolymer PP (Tensile strength = 5693 psi (39.3 MPa); Notched Izod = 0.46 ft-lb/in (25 J/m²); MFR = 21.9 g/10 min.)¹⁰ Exact™ 4041 - Exxon Chemical Co.

In re claim 3, the impact modifying polymer(s) disclosed by Jacoby are considered to inherently have a polar functionality, thereby reducing hydrocarbon oil absorption to provide improved gel compatibility performance because they comprise similar, if not the same, materials to those used in the claimed invention (see Jacoby at col. 5, lines 9-57).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington as applied to claim 1 above, and further in view of Patent No. 6,844,381 B2 to Kelly et al. (“Kelly”).**

In re claim 2, Harrington teaches all the limitations of claim 1 as mentioned. Harrington only differs from claim 2 in that Harrington does not disclose that his extruded blend further comprises a hydrocarbon oil. Kelly, on the other hand, teaches combining a hydrocarbon oil (“mineral oil”) with polypropylene blends (e.g., see Kelly at the Abstract). The motivation to combine the teachings of Kelly with Harrington is obtain improved moldability and/or low temperature impact strength. *See* Kelly at column 7, lines 27-39. Therefore, it would have been

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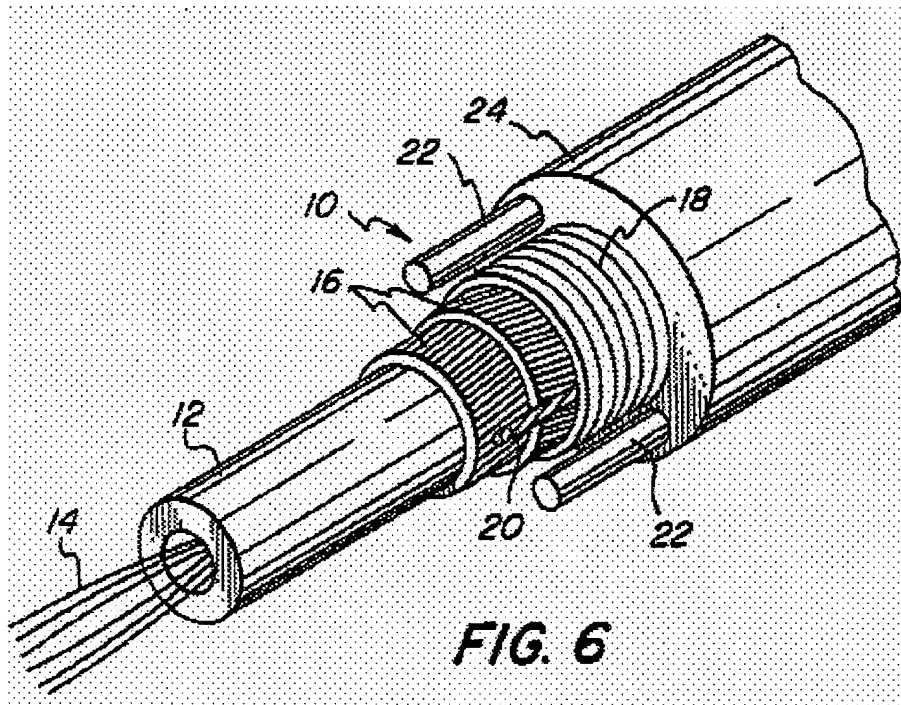
obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 4 in view of Harrington combined with Kelly.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jacoby as applied to claim 1 above, and further in view of Patent No. 6,844,381 B2 to Kelly et al. (“Kelly”).

In re claim 2, Jacoby teaches all the limitations of claim 1 as mentioned. Jacoby only differs from claim 2 in that Jacoby does not disclose that his extruded blend further comprises a hydrocarbon oil. Kelly, on the other hand, teaches combining a hydrocarbon oil (“mineral oil”) with polypropylene blends (e.g., see Kelly at the Abstract). The motivation to combine the teachings of Kelly with Jacoby is obtain improved moldability and/or low temperature impact strength. *See* Kelly at column 7, lines 27-39. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 4 in view of Jacoby combined with Kelly.

11. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patent No. 5,911,023 to Risch et al. (“Risch”) in view of Harrington as applied to claims 1, 3, and 6 above.

In re claims 1 and 3-6, Risch discloses an optical fiber cable 10 comprising a protective buffer tube 12 and at least one optical fiber transmission medium 14. Risch further teaches that the buffer tube 12 can be made using extruded blends of polypropylene (e.g., see Risch at the Abstract). Figure 6 of Risch is reproduced below.



Thus, Risch only differs from claims 1, 3, and 5-6 in that Risch does not teach using an extruded blend comprising the composition set forth by claims 1 and 3. Harrington, as mentioned above, teaches an extruded blend comprising all the limitations of claims 1 and 3. The motivation to use the extruded blend of Harrington to manufacture the buffer tubes of Risch is obtain improved elastic recovery and toughness. *See* Harrington at the Abstract. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 1, 3, and 5-6 in view of Risch combined with Harrington.

In re claim 4, when Harrington is combined with Risch, a shrinkage of less than about 2.0 percent after 24 hours at 100 degrees C would inherently be present because the extruded blend disclosed by Harrington has the same physical composition recited by claim 1. Therefore, it

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would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 4 in view of Risch combined with Harrington.

12. Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Risch in view of Jacoby as applied to claims 1, 3, and 6 above.

In re claims 1 and 3-6, Risch discloses an optical fiber cable 10 comprising a protective buffer tube 12 and at least one optical fiber transmission medium 14. Risch further teaches that the buffer tube 12 can be made using extruded blends of polypropylene (e.g., see Risch at the Abstract). Thus, Risch only differs from claims 1, 3, and 5-6 in that Risch does teach using an extruded blend comprising the composition set forth by claims 1 and 3. Jacoby, as mentioned above, teaches an extruded blend comprising all the limitations of claims 1 and 3. The motivation to use the extruded blend of Jacoby to manufacture the buffer tubes of Risch is obtain improved strength and toughness. *See* Jacoby at the Abstract. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claims 1, 3, and 5-6 in view of Risch combined with Jacoby.

In re claim 4, when Jacoby is combined with Risch, a shrinkage of less than about 2.0 percent after 24 hours at 100 degrees C would inherently be present because the extruded blend disclosed by Jacoby has the same physical composition recited by claim 1. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 4 in view of Risch combined with Jacoby.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas
Patent Examiner
Art Unit 2874

or
July 24, 2006



Rodney Bovernick
Supervisory Patent Examiner
Technology Center 2800